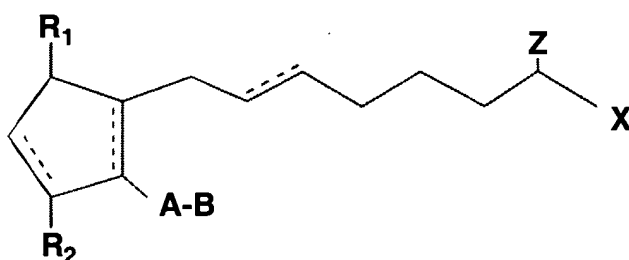


Claims

I claim:

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1. A method of preventing the graying of mammalian hair or converting gray hair to the original pigment in hair follicles of a mammal in need thereof which comprises administering to said mammal a pharmaceutical composition comprising an effective amount of a compound represented by formula I



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wherein the dashed bonds represent a single or double bond which can be in the cis or trans configuration, A is an alkylene or alkenylene radical having from two to six carbon atoms, which radical may be interrupted by one or more oxa radicals and substituted with one or more hydroxy, oxo, alkyloxy or alkylcarboxy groups wherein said alkyl radical comprises from one to six carbon atoms; B is a cycloalkyl radical having from three to seven carbon atoms, or an aryl radical, selected from the group consisting of hydrocarbyl aryl and heteroaryl radicals having from four to ten carbon atoms wherein the heteroatom is selected from the group consisting of nitrogen, oxygen and sulfur atoms; X is -N(R⁴)₂ wherein R⁴ is selected from the group consisting of hydrogen, a lower alkyl radical having from one to six carbon atoms,

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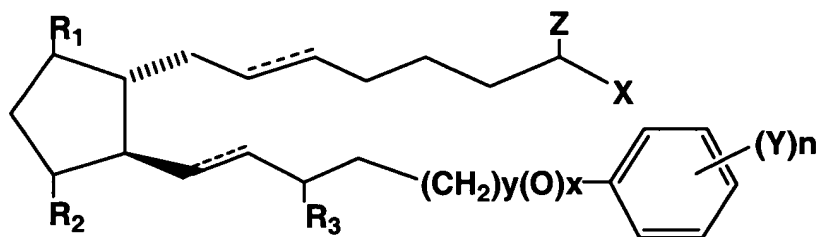
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$\text{R}^5\text{-C-}$ and $\text{R}^5\text{-O-C-}$, wherein R^5 is a lower alkyl radical having from one to six carbon atoms; Z is $=\text{O}$; one of R_1 and R_2 is $=\text{O}$, $-\text{OH}$ or a $-\text{O}(\text{CO})\text{R}_6$ group, and the other one is $-\text{OH}$ or $-\text{O}(\text{CO})\text{R}_6$, or R_1 is $=\text{O}$ and R_2 is H, wherein R_6 is a saturated or unsaturated acyclic hydrocarbon group having from 1 to about 20 carbon atoms, or $-(\text{CH}_2)_m\text{R}_7$ wherein m is 0 or an integer of from 1 to 10, and R_7 is cycloalkyl radical, having from three to seven carbon atoms, or a hydrocarbyl aryl or heteroaryl radical, as defined above
 10 or a pharmacologically acceptable acid addition salt thereof.

2. The method of claim 1 wherein the concentration of the compound applied is from about 0.0000001% to about 50% by weight of the composition.

15 3. The method of claim 1 wherein the compound is a compound of formula (III).



wherein y is 0 or 1, x is 0 or 1 and x and y are not both 1, Y is a radical selected from the group consisting of alkyl, halo, nitro, amino, thiol, hydroxy, alkyloxy, alkylcarboxy, halo substituted alkyl wherein said alkyl radical comprises from one to six carbon atoms, n is 0 or an integer of from 1 to about 3 and R_3 is $=\text{O}$, $-\text{OH}$ or $-\text{O}(\text{CO})\text{R}_6$ wherein R_6 , hatched lines indicate α configuration and solid triangles are used to indicate β configuration.

25 4. The method of claim 3 wherein the compound is bimatoprost or a pharmaceutically acceptable salt thereof

5. The method of claim 1 wherein the compound of formula I is applied systemically.
6. The method of claim 1 wherein the compound of formula I is applied topically.
- 5 7. The method of claim 1 wherein the compound of formula I is applied by aerosol.
8. The method of claim 1 wherein the compound of formula I is applied as a cream.
9. The method of claim 1 wherein the compound of formula I is applied as a lotion.
- 10 10. The method of claim 1 wherein the compound of formula I is applied as a solution.